Year: 2015

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Originally published at:
Caves, Katherine; Bandaranayake, Bandara; Schenker-Wicki, Andrea (2015). Is Formula-Based Equity Funding Enough? A Configurational Analysis of School Achievement in Victoria, Australia. In: American Educational Research Association Annual Meeting, Chicago, IL, USA, 16 April 2015 - 20 April 2015.

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Session Title New Approaches for Funding Schools: Illustrations From Australia, China, and the United States

Session Type Paper

Presentation Date 4/20/2015

Presentation Location Chicago, Illinois

Descriptors Achievement, Equity, Finance

Methodology Quantitative

Unit Division L - Educational Policies and Politics

A Configurational Analysis of Conditions for School Achievement in Victoria, Australia

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Acknowledgements

The authors would like to thank Dr. Judith Glaesser and Dr. Barry Cooper for their very helpful feedback, as well as Dr. Uschi Backes-Gellner and the members of her research chair—especially Dr. Johannes Meuer and Dr, Christian Rupietta—for their input and support.

Abstract

The Australian state of Victoria uses its funding formula to correct for schools' community educational advantage, size, and location; the index of community educational advantage has been the strongest predictor of achievement historically. We use Qualitative Comparative Analysis (QCA) to examine the configurations of school and funding factors necessary and sufficient for high and low achievement, and find no consistently necessary profile but one consistently sufficient configuration for high achievement and four for low achievement. While community educational advantage is not an insurmountable dictate of school achievement, there is no consistent pathway to failure for high-advantage schools or to success for low-advantage schools. These results highlight the utility of examining school achievement through the lens of complex and configurational causality.

Keywords: Formula funding, equity, QCA

A Configurational Analysis of Conditions for School Achievement in Victoria, Australia

In this essay, we take a configurational perspective to examining school resources and achievement, using Qualitative Comparative Analysis (QCA) to search for necessary and sufficient configurations of conditions for school achievement. We use administrative data from the Australian state of Victoria including data on funding from both government and local sources. This allows us to probe which configurations of funding, policy, and background characteristics are necessary or sufficient for schools to perform well despite weak correlational relationships (Miller & Voon, 2011) and the difficulty of separating cause and effect in the formation of school profiles. This approach turns away from purely causal isolation of the net effects of individual variables in favor of an analysis that examines schools holistically, explores causal complexity, and acknowledges the asymmetric conditions for success and failure in schooling (Ragin, 2008).

The state of Victoria, Australia explicitly prioritizes equity in its statements and policies; the formula used to allocate funding to Victorian schools includes additional funding for students and schools with greater need based on their location, level of community education background, and size while controlling for year level (DEECD, 2011; 2012). If the additional funding is sufficient for equity, heterogeneity in school achievement should come from differences in policy choices made at the school level and not from school characteristics corrected for in the formula. Many within-school policies that may affect student achievement are not visible in data such as this—including principal and teacher training or classroom strategies—but we can observe whether differences in school-level achievement can be explained by financial and demographic characteristics.

Context

The Department of Education and Early Childhood Development (DEECD) administers education at the state level in Victoria, while individual schools are governed by their own School Councils without intermediaries. Schools are self-managed and are charged to pursue the best interests of their students within the framework of the law (DEECD, 2011). Victoria's state education funding formula for government schools is known as the Student Resource Package (SRP), and has been in operation since 2005. The SRP incorporates a combination of student-based, school-based and targeted initiative-based funding. The vast majority of SRP funding is student-based, starting with the allocation for Core Student Learning for normal activities of teaching, learning, and administration. Equity funding allocates additional resources to at-risk or underprivileged groups (DEECD, 2012; Bandaranayake, 2013). 2–5% of government schools' revenues come from parent fees, investments, grants, and fundraising activities, which schools are free to collect and invest at their own discretion.

The central education authority in Australia calculates an Index of Community Socio-Educational Advantage (ICSEA) score for every school based on the socio-educational advantage of students' families, the remoteness of the school, the proportion of indigenous students, and the proportion of students who do not speak English as their native language and are also disadvantaged. ICSEA scores are intended to capture a school's local educational background excluding wealth—they are specifically socio-educational rather than socio-economic—and are not based on the previous performance of the school (ACARA, 2012). Even though they factor into the funding formula, ICSEA scores are the strongest single predictor of school success, accounting for approximately 62% of primary school test scores (Miller & Voon, 2011).

Findings on the effects of funding—including funding from different sources—in this context are mixed. Johnson, Jensen, Feeny, and Methakullawat (2004) differentiate between locally raised funding and the global school budget, but are unable to find significant or consistent results across analyses. Similarly, Lamb, Walstab, Teese, Vickers, and Rumberger (2004) examine core funding, locally-raised funding, and special funding separately but find either insignificant or inconclusive results. Marks (2010) reviews these and other studies before concluding that resources are irrelevant to student performance. Consistently with the international findings discussed earlier, any links between school resources and achievement are complex or tenuous if they do exist (Miller & Voon, 2011).

In general, work in this context emphasizes the importance of local socio-educational conditions for school success on standardized tests (Miller and Voon 2011). Other work examines the effects of non-funding variables on school achievement. Generally, schools in urban areas do well, as do larger schools, though there is some debate on the relative effects of educational inputs on outcomes (Krueger, 2003). Johnson et al (2004) use school-level Victorian data similar to that in this study and perform multivariate analyses using primarily a random effects model. For primary schools, larger class sizes have a slightly negative impact for both metropolitan and non-metropolitan schools, but the effect is often insignificant. Lamb et al (2004) find regional differences by state in educational achievement, but also confirm that schools in metropolitan areas generally outperform those in provincial, rural, or remote areas.

Data

The Australian Curriculum, Assessment and Reporting Authority (ACARA) collects and maintains data on school test scores, finances, background, and policies. We limited the sample to government-operated primary schools with complete data—only 26 schools were eliminated for incomplete data. We chose to focus on government schools because the funding situation for Catholic and independent schools is different from that of government schools, as is their general composition. We focus on primary schools because their educational needs and the resources allocated to them by the SRP are distinct from those of secondary and combined schools. The final sample includes 1015 schools.

Our outcome measure is the standardized exam used throughout Australia, called the Australian National Assessment Program – Literacy and Numeracy (NAPLAN). The exam is the primary method of school accountability and is used to determine whether a given school is doing its job adequately. We evaluate the behavior outcome with respect to five school-level conditions: ICSEA score, location in terms of urbanicity, total enrollments, teacher-student ratio, and funding.

- - - Insert Table 1 about here - - -

Financial data collected by ACARA records each school's income by origin, from both government and non-government sources. We summed federal and state funding to generate total government funding, and the two non-government categories (fee and parent funding, or other private funding) were combined into local funding. We divided these by the total number of full time-equivalent enrollments at the school for per-student government- and local funding. The condition used in analysis is the ratio of local to government spending per student. The ratio of local to government funding does not capture absolute resources, but it does capture extra financial resources from the community after correcting—through the funding formula—for the school's level of need and the cost of educating its unique student population to the level expected by the Australian government (Levačić, 2007).

While the SRP is not an unlimited source of funding and Australian schools remain underfunded (Gonski et al, 2011), the formula exists to distribute existing funding as equitably as possible based on the needs of the school. The effectiveness of a funding formula such as the SRP is reliant on the quality of the system's implementation (Schenker-Wicki, 2008; Levačić, 2007).

Empirical Strategy

Qualitative Comparative Analysis (QCA) is a set-theoretic tool that uses Boolean algebra to perform comparative analysis of cases (Ragin, 1987, 2000, 2008). The method examines all possible configurations of conditions to determine which conditions or configurations of conditions are consistently necessary or sufficient for the specified outcome. QCA is a novel method in education research, and was introduced to the mainstream of American education research in a qualitative application by Trujillo and Woulfin (2014).

Educators and policymakers use a language of necessity and sufficiency when discussing what schools and students "need" and what configuration and distribution of resources is "enough," so thinking about data in set theoretic terms allows us to address this dialogue directly (Schneider & Wagemann, 2012). QCA originated in political science, and is increasingly used to examine efficiency and equity in education (Cooper, 2005; Cooper & Glaesser, 2008, 2010, 2011; Glaesser & Cooper, 2011, 2013; Poder, Kerem & Lauri, 2013; Trujillo & Woulfin, 2014).

QCA allows us to consider data in set theoretic terms, where sufficiency and necessity are subset relations. Instead of looking for the net correlational effects of individual variables, we look at schools as holistic cases to determine what is necessary and sufficient for schools to succeed or fail. In this case, it is a useful approach to assessing whether funding can compensate for school background without separating the characteristics of the school from one another. This does not diminish the well-demonstrated utility of correlational research methods in any way, but does allow us to examine issues from a new perspective and gain new insights.

Causal complexity is a reality in educational research, and QCA addresses this complexity in three specific ways: asymmetry, conjunctural causation, and equifinality. *Asymmetry* acknowledges that the configuration of conditions sufficient for a school to fail is not necessarily the opposite of the configuration sufficient for success. The reasons that schools succeed are different from—not only the opposite of—the reasons for failure. *Conjunctural causation* examines conditions as they function configurationally rather than individually. Conditions with unclear effects like school size and teacher-student ratio may be part of configurations sufficient for both success and failure depending on the other configurational elements, which would contribute to the difficulty of isolating their net effects. Finally, *equifinality* allows for multiple pathways to a given outcome. One useful outcome of this characteristic is that configurations identified by QCA as sufficient or necessary for school success can be a sort of road map: a school can identify the configuration that matches it most closely and work to meet—or avoid—the specific benchmarks of the configuration.

Calibrations

Calibration is the determination of set membership criteria, and is an important part of fsQCA. Set theory differentiates between crisp and fuzzy sets. Set membership options in crisp sets are limited to 0 (fully out) and 1 (fully in). We use this calibration style for school location. In fuzzy sets, membership scores can cover the entire interval from 0 to 1, where 0 is fully out, below 0.5 is more out than in, 0.5 is the crossover point at which the case is neither in nor out, above 0.5 is more in than out, and 1 is fully in the set. This is useful when variables are continuous, such as test scores or funding dollars.

In this study, set membership was calibrated using the direct method, wherein three anchor points are established for fully out, the crossover point of maximal ambiguity, and fully in the set. For most sets, we used the 10^{th}, 50^{th}, and 90^{th} percentiles. For test scores, we used quartiles (25^{th}, 50^{th}, and 75^{th} percentiles) to reflect how school performance is most-often reported in this context. This style of calibration is useful in larger datasets because it is easily replicable and because the size of the data increases variability and eliminates clear discontinuities that could be used for manual calibration. Calibration cutoff points for all sets are shown in Table 2. Truth tables for both analyses can be found in the appendix.

- - - Insert Table 2 About Here - - -

Data analysis was conducted using the QCA package for R (Thiem & Dusa, 2013).

Results

Previous research recognized ICSEA scores as the single biggest predictor of school success, with school size and urban location also important in the Australian context (Miller & Voon, 2011). In this study, we find that no factor or combination of factors is necessary for school success or failure, and none of these is sufficient or necessary for school success alone. However, one configuration of factors is sufficient for schools to score higher on the NAPLAN exam and four are sufficient for schools to score lower.

The tables in this section use Boolean notation, so conditions in all-capital letters are present, those in lower-case letters are absent, and asterisks indicate the logical "and," where the conditions must act together. Each line of the table represents a possible alternative connected by the logical "or," where the outcome can be achieved by any of the configurations in substitution. Raw coverage indicates the proportion of schools with the specified outcome that match a given configuration, unique coverage is those matching only that configuration and no other in the solution. A configuration's consistency is the frequency with which schools matching the configuration also match the outcome. The coverage of the solution as a whole reflects how well it represents schools achieving the given outcome, and its consistency how often schools matching the configuration also match the outcome. Because we use fuzzy sets, these are not interpretable as exact percentages but rather the proportion of schools combined with the strength of their set membership. For interpretive purposes, they can be considered to *roughly* represent the proportions discussed above but this should be done with the awareness that fuzzy set membership scores preclude exact percentages (for more discussion of paradoxes in fsQCA, see Cooper & Glaesser, 2011).

- - - Insert Table 3 about here - - -

The combination of high community socio-educational advantage with an urban location and a relatively high level of non-government funding beyond the price of educating students determined by the formula is sufficient for school success. In fact, this configuration is the only consistently sufficient pathway for success, meaning that schools without these three factors do not have a reliable configuration of school characteristics and policies to follow for success. The solution does not cover all successful schools—schools without the configuration can and do succeed—but there is no other reliable pathway. School size is irrelevant, indicating that it is adequately accounted for in the formula. Similarly, teacher-student ratio and attendance rate are irrelevant, which matches the growing prevalence in Australian education research of the finding that within-school administrative and instructional choices are far more relevant for achievement than class size policies and small variations in attendance rates (Jensen & Sonneman, 2014). This finding does expose a mechanism for funding in which it is sufficient for success when combined with other school factors. By using a configurational method, we were able to find new results.

The configurations sufficient for higher school achievement are asymmetric from those for lower school achievement, so we repeat the analysis with the set of schools scoring in the bottom quartile as the outcome set. Using the same calibrations, frequency cutoff of five, and consistency cutoff of 0.8, our sample for this analysis was 639 schools.

- - - Insert Table 4 about here - - -

Here, we find stronger effects of community socio-educational background and interesting configurational results for other conditions. There are more routes consistent for failure than there are for success—Tolstoy might have been talking about schools when he said that “all happy families are alike; each unhappy family is unhappy in its own way” (Tolstoy, 1877). These four configurations together form a solution with high consistency and coverage: most likely, schools that match at least one of these configurations will struggle, and many struggling schools match at least one of these configurations. One key point here is that low ICSEA score is present in all four configurations.

The first configuration has the highest raw and unique coverage meaning that it represents the greatest proportion of failing schools. It combines low ICSEA score with low attendance rate where the presence of all other conditions is irrelevant. These may be schools where the community is not highly educated and the students are not getting to school, either because school attendance is not prioritized or because it is difficult. These students have less access to education at home and at school, affecting the background and school aspects of their educational production regardless of whether or not the school is in an urban location, what its size and student-teacher ratio are, and how much money the school can raise.

The second configuration combines low ICSEA score with low teacher-student ratio and a low ratio of government to local funding. This configuration has relatively high raw has no unique coverage—this is a possibility when using fuzzy sets and is not alarming (see Ragin, 2008 or Cooper & Glaesser, 2011 for more information). This configuration represents a general lack of resources: schools with smaller teaching staffs, low additional funding, and less-advantaged educational backgrounds. The low ICSEA score implies that students' background factors will be low, and the school may not have the resources to make up the difference.

The third configuration combines low ICSEA score with an urban location and a high student-teacher ratio. While it seems counterintuitive that urban location and small class sizes would be associated with a struggling school, it is important to remember that findings on urbanicity are strongly tied to the typically higher socioeconomic status of urban communities in Australia, and findings on class sizes are inconclusive at best (Miller & Voon, 2011). One possible interpretation is that these are urban schools in disadvantaged neighborhoods—indicated by the low ICSEA score. When all of the relevant conditions are taken together, a school in this configuration could be an urban school with a disadvantaged community where the smaller class sizes are failing to help improve outcomes (Jensen & Sonneman, 2014).

The final configuration combines low ICSEA score, small size, and a high ratio of local to government funding. Because of the formula funding scheme, schools in Victoria have almost complete autonomy within the framework of the law. Specifically, they are free to spend and invest their government-issued funding, and to collect additional funding from fees, parents, and other private sources. A possible interpretation of this configuration is a small school with good financial resources and support that struggles to appropriately invest its resources in policies and practices that promote student achievement on the NAPLAN test.

If anything, the solution for unsuccessful schools offers more insight than that for successful schools. First, while ICSEA is neither sufficient nor necessary for school success on its own, its presence in all four configurations in this solution raises equity concerns that were not covered in the success analysis. Despite the greater coverage of this solution and the increased diversity of pathways, there is no consistent pathway to failure for schools with high ICSEA scores. Put differently, even though schools with low ICSEA scores may be able to succeed, schools with a high ICSEA score are all but insulated from failure. Even if the funding formula and education policies in Victoria are reducing the positive effect of community educational background on school success, they do not appear to be making up for its role as a negative actor as effectively. This asymmetric finding is especially relevant for the discussion of equity in education.

In these configurations, neither urban location nor school size are consistently present or absent. Urban location is present in the single configuration for successful schools, but not consistently absent among failing schools. The funding formula may be accounting for urban location better in struggling schools than it does in succeeding schools, possibly because the advantage of an urban location is asymmetric. When an urban location is likely separate from higher socioeconomic status, it is present in a failing configuration. With a configurational perspective, these distinctions can be teased apart. Similarly, school size makes its only appearance in a configuration with low ICSEA value and high local funding, indicating that its effects may also be configurational and reliant on combination with other factors. Beyond highlighting the utility of a configurational perspective, these observations demonstrate that the funding formula is accounting for urbanicity and school size effects in many cases but not always.

This analysis also provides more insight into the role of controllable factors than the successful analysis. Low attendance appeared as part of a failing configuration, as expected. Teacher-student ratio appeared in both its presence and absence—again reflecting the lack of evidence for small class sizes as a policy tool (Jensen & Sonneman, 2014). Additional local funding was similarly mixed, meaning that its effects may also be configurational, asymmetric, and equifinal in nature and further analyses that take on the perspective of complex causality should prove useful in demystifying its effects.

In order to test the robustness of the model and following the recommendations of Glaesser & Cooper (2013), we tested the robustness of our solutions by modifying calibrations, frequency cutoffs, and consistency cutoffs. Our results were impressively reliable. This reliability indicates that the results are not a coincidence of our model specifications but a reliable outcome of the data itself.

Discussion & Conclusions

In this study, we find that no condition is sufficient or necessary for school success alone, and no factor or combination of factors is necessary for school success or failure.

The combination of high community socio-educational advantage with an urban location and a relatively high level of non-government funding is sufficient for school success. In fact, this configuration is the only consistently sufficient pathway for success. The solution does not cover all successful schools—schools without the configuration can and do succeed—but there is no other reliable pathway. School irrelevant, and funding does appear to play a role in school achievement in specific combination with other school factors. By using a configurational method, we were able to find new and theory-supporting results.

In the four different configurations that are together consistently sufficient for low achievement, all four include low ICSEA scores. While low ICSEA is not sufficient for failure by itself, there is no consistent pathway for schools with high scores to fail despite a large majority of unsuccessful schools being covered by the solution as a whole. Schools with low ICSEA are not guaranteed failure, but they cannot match the one configuration that is reliably sufficient for success and must seek out their own alternatives or less-consistent options. This raises equity concerns that may be invisible in other analyses.

Urban location and school size are much less important than socio-educational advantage—not appearing in all but one configuration each—and their presence highlights possible blind spots in the formula based on the configurational and asymmetrical behavior of school factors. Controllable factors like teacher-student ratio, attendance rate, and the amount of funding schools collect are all similarly complex in their causality. By examining these conditions configurationally, we were able to assess possible mechanisms in a new way

Although our results are illuminating and robust, there are limitations to consider. We measure achievement in terms of exam performance, not life skills and other intangible outputs of schools. Our data for this initial exploration is limited to the school level and to the conditions available in our data. We cannot analyze outcomes for individual students, nor can we account for the socioeconomic background of the school. Future studies of this nature should address these issues. Additionally, the interpretation of the local to government funding ratio relies on the assumption that the funding formula is—as it aims to be—an effective equalizer. Another possible interpretation of this funding condition is to assume that it represents the economic status of the school’s community: schools with low government funding due to their high status and low need are the same schools that collect the largest donations from the deep pockets of their community. This interpretation does not change our conclusions, but it should be taken into account. Given that these are government schools and not the many Catholic or independent schools in Victoria, we are comfortable with our interpretation.

The Department of Education and Early Childhood Development in Victoria explicitly sets equity and achievement as its key goals. In the case of the negative outcome especially, there are indications that equity concerns are not adequately met by current interventions. However, there is also evidence that government funding is going where it is needed, as nothing is necessary for success or failure. However, for the lowest-performing schools, additional educational interventions may be necessary to correct for the deleterious effects of low socio-educational advantage.

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Tables

Table 1: Descriptive Statistics

N=1015	Min	Median	Mean	Max.
ICSEA Value	740	1000	1017	1209
Student-Teacher Ratio	0.05695	0.08523	0.09301	0.27273
Attendance Rate	87%	94%	93.83%	97%
Government Funding‡	$3,524	$8,519	$9,342	$31,480
Local Funding‡	$195.20	$702.70	$767.40	$3,077.70
Local/Gov. Funding‡	$0.01	$0.08	$0.09	$0.35
NAPLAN Score	347	454.2	455.5	537.5

‡*Funding values are all per-student and measured in Australian dollars*

Table 2: Calibration Cutoffs

Condition	Set Name	Fully Out	Crossover	Fully In
ICSEA Value	ICSEA	945	1000	1127
Location	URBAN	Non-Metro	-	Metro
School Size	SIZE	54.2	249.0	554.6
Teacher-Student Ratio	TEACH	0.0418	0.0772	0.1471
Attendance Rate	ATTEND	92%	94%	95%
Local/Gov. Funding‡	LPGFUND	$0.04	$0.08	$0.15
NAPLAN Score	OUTCOME	435.00	454.25	478.63

‡*Funding values are all per-student and measured in Australian dollars*

Table 3: Solution Table for High Achievement

Solution	Raw Coverage	Unique Coverage	Consistency
ICSEA*URBAN*LPGFUND	0.495	-	0.900

Table 4: Solution Table for Low Achievement

Solution	Raw Coverage	Unique Coverage	Consistency
icsea *attend	0.575	0.119	0.849
icsea*teach*lpgfund	0.417	0.000	0.844
icsea*URBAN*TEACH	0.240	0.004	0.843
icsea*size*LPGFUND	0.297	0.017	0.779
Solution	0.727		0.818

Appendix

Table A1: Truth Table for Positive Outcome Analysis, Sorted by n and Inclusion

ICSEA	URBAN	SIZE	TEACH	ATTEND	LPGFUND	OUT	n	incl	PRI
1	1	1	0	1	1	1	148	0.921	0.895
0	0	0	1	0	0	0	82	0.412	0.234
0	1	0	1	0	0	0	29	0.412	0.124
0	1	1	1	0	0	0	29	0.430	0.137
0	0	0	1	1	0	0	19	0.564	0.309
1	0	0	1	0	0	0	19	0.612	0.418
1	1	0	0	1	1	1	18	0.900	0.844
0	0	0	1	0	1	0	17	0.483	0.250
1	1	1	1	1	1	1	17	0.904	0.846
0	1	1	0	0	0	0	15	0.478	0.165
1	0	0	1	1	0	0	14	0.700	0.482
0	0	0	1	1	1	0	13	0.608	0.326
1	0	0	1	0	1	0	13	0.604	0.389
1	1	0	1	1	1	1	13	0.872	0.791
0	0	0	0	0	0	0	12	0.457	0.198
1	0	0	1	1	1	0	12	0.700	0.486
1	0	1	0	1	1	0	12	0.734	0.459
1	1	1	0	1	0	0	12	0.800	0.651
0	0	1	1	0	0	0	11	0.395	0.142
0	1	0	1	1	0	0	11	0.593	0.310
0	0	1	0	0	0	0	9	0.422	0.156
0	1	1	0	1	0	0	9	0.657	0.365
1	1	1	0	0	1	1	9	0.816	0.681
0	0	0	0	1	0	0	8	0.577	0.258
0	1	1	1	1	0	0	8	0.603	0.297
1	0	0	0	0	0	0	8	0.612	0.365
1	0	0	0	1	1	0	8	0.716	0.464
1	1	0	0	0	1	1	8	0.831	0.693
1	1	0	1	0	1	1	8	0.806	0.629
0	1	0	1	0	1	0	7	0.642	0.308
0	1	1	0	0	1	0	7	0.667	0.327
1	1	1	1	0	1	1	7	0.802	0.604
0	0	0	0	0	1	0	6	0.490	0.210
0	1	1	0	1	1	0	6	0.791	0.561
0	0	1	0	1	0	0	5	0.553	0.204
1	0	1	0	1	0	0	5	0.697	0.397

1	1	1	0	0	0	0	5	0.673	0.389
0	0	1	0	0	1	?	4	0.485	0.206
0	1	0	0	0	0	?	4	0.516	0.201
0	1	1	1	0	1	?	4	0.665	0.301
1	1	0	1	0	0	?	4	0.672	0.386
1	1	1	1	1	0	?	4	0.796	0.626
0	0	0	0	1	1	?	3	0.630	0.308
0	0	1	1	0	1	?	3	0.486	0.202
0	1	0	1	1	1	?	3	0.769	0.536
1	0	1	0	0	1	?	3	0.647	0.400
1	0	1	1	0	0	?	3	0.604	0.330
0	0	1	0	1	1	?	2	0.629	0.272
0	0	1	1	1	0	?	2	0.539	0.197
0	1	0	0	0	1	?	2	0.684	0.361
0	1	0	0	1	0	?	2	0.659	0.387
1	0	0	0	0	1	?	2	0.621	0.383
1	0	0	0	1	0	?	2	0.685	0.401
1	1	0	0	0	0	?	2	0.687	0.421
0	1	0	0	1	1	?	1	0.798	0.585
0	1	1	1	1	1	?	1	0.781	0.508
1	0	1	1	0	1	?	1	0.622	0.346
1	1	0	0	1	0	?	1	0.802	0.660
1	1	0	1	1	0	?	1	0.785	0.624
1	1	1	1	0	0	?	1	0.667	0.357
0	0	1	1	1	1	?	0	0.610	0.252
1	0	1	0	0	0	?	0	0.609	0.344
1	0	1	1	1	0	?	0	0.670	0.357
1	0	1	1	1	1	?	0	0.700	0.398

Table A2: Truth Table for Negative outcome Analysis, Sorted by n and Inclusion

ICSEA	URBAN	SIZE	TEACH	ATTEND	LPGFUND	OUT	n	incl	PRI
1	1	1	0	1	1	0	148	0.328	0.103
0	0	0	1	0	0	1	82	0.812	0.755
0	1	0	1	0	0	1	29	0.914	0.872
0	1	1	1	0	0	1	29	0.910	0.863
0	0	0	1	1	0	0	19	0.798	0.679
1	0	0	1	0	0	0	19	0.718	0.577
1	1	0	0	1	1	0	18	0.460	0.155
0	0	0	1	0	1	1	17	0.828	0.750
1	1	1	1	1	1	0	17	0.476	0.154
0	1	1	0	0	0	1	15	0.896	0.834
1	0	0	1	1	0	0	14	0.719	0.514
0	0	0	1	1	1	1	13	0.807	0.668
1	0	0	1	0	1	0	13	0.746	0.607
1	1	0	1	1	1	0	13	0.516	0.209
0	0	0	0	0	0	1	12	0.864	0.798
1	0	0	1	1	1	0	12	0.714	0.509
1	0	1	0	1	1	0	12	0.774	0.539
1	1	1	0	1	0	0	12	0.625	0.349
0	0	1	1	0	0	1	11	0.900	0.858
0	1	0	1	1	0	1	11	0.816	0.689
0	0	1	0	0	0	1	9	0.893	0.844
0	1	1	0	1	0	1	9	0.801	0.631
1	1	1	0	0	1	0	9	0.608	0.319
0	0	0	0	1	0	1	8	0.853	0.742
0	1	1	1	1	0	1	8	0.831	0.701
1	0	0	0	0	0	0	8	0.777	0.634
1	0	0	0	1	1	0	8	0.755	0.536
1	1	0	0	0	1	0	8	0.618	0.306
1	1	0	1	0	1	0	8	0.668	0.366
0	1	0	1	0	1	1	7	0.840	0.692
0	1	1	0	0	1	1	7	0.837	0.672
1	1	1	1	0	1	0	7	0.698	0.396
0	0	0	0	0	1	1	6	0.863	0.788
0	1	1	0	1	1	0	6	0.732	0.438
0	0	1	0	1	0	1	5	0.885	0.795
1	0	1	0	1	0	0	5	0.800	0.602
1	1	1	0	0	0	0	5	0.792	0.611
0	0	1	0	0	1	?	4	0.866	0.794

0	1	0	0	0	0	?	4	0.878	0.799
0	1	1	1	0	1	?	4	0.855	0.699
1	1	0	1	0	0	?	4	0.793	0.613
1	1	1	1	1	0	?	4	0.659	0.374
0	0	0	0	1	1	?	3	0.836	0.692
0	0	1	1	0	1	?	3	0.870	0.798
0	1	0	1	1	1	?	3	0.733	0.464
1	0	1	0	0	1	?	3	0.765	0.600
1	0	1	1	0	0	?	3	0.805	0.670
0	0	1	0	1	1	?	2	0.860	0.725
0	0	1	1	1	0	?	2	0.887	0.803
0	1	0	0	0	1	?	2	0.821	0.639
0	1	0	0	1	0	?	2	0.784	0.612
1	0	0	0	0	1	?	2	0.765	0.617
1	0	0	0	1	0	?	2	0.789	0.599
1	1	0	0	0	0	?	2	0.772	0.578
0	1	0	0	1	1	?	1	0.715	0.414
0	1	1	1	1	1	?	1	0.774	0.492
1	0	1	1	0	1	?	1	0.800	0.654
1	1	0	0	1	0	?	1	0.617	0.340
1	1	0	1	1	0	?	1	0.643	0.376
1	1	1	1	0	0	?	1	0.815	0.643
0	0	1	1	1	1	?	0	0.869	0.748
1	0	1	0	0	0	?	0	0.795	0.656
1	0	1	1	1	0	?	0	0.817	0.643
1	0	1	1	1	1	?	0	0.801	0.602